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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/084,845

02/26/2002

Mustafa Pinarbasi

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(12780.39)

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7590

02/08/2005

EXAMINER

DAVIS, DAVID DONALD

INTELLECTUAL PROPERTY LAW OFFICE
1901 S. BASCOM AVENUE, SUITE 660
CAMPBELL, CA 95008

ART UNIT

PAPER NUMBER

2652

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/084,845

Applicant(s)

PINARBASI ET AL

Examiner

David D. Davis

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 29-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/26/02; 10/15/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 29-40 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on October 12, 2004.

Information Disclosure Statement

1. Receipt is acknowledged of the Information Disclosure Statements (IDS) received February 26, 2002 and October 15, 2004.

Drawings

2. Figures 2 and 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Chen et al (US 6,183,859). Applicant's Admitted Prior Art (AAPA) shows in figure 2 a magnetic head 30 including a spin valve sensor 50 with a magnetic shield layer 34 being fabricated above a substrate base 42. Figure 3 shows a first electrical insulation layer first electrical insulation layer 44 being fabricated above the shield layer 34 and a spin valve sensor 50 structure being disposed above the first electrical insulation layer 44 layer. The spin valve sensor 50 structure of AAPA includes a seed layer 76/80/84 being fabricated above the first electrical insulation layer 44 layer. A PtMn layer is disposed above the seed layer 76/80/84 and at least one pinned magnetic layer and at least one free magnetic layer is disposed above the PtMn layer. The seed layer 76/80/84 includes an Al₂O₃ sublayer, an NiMnO sublayer, and an Ta sublayer.

The Ta seed sublayer of AAPA is fabricated to have a thickness of approximately 10 to 40 Angstroms. As per claim 6, AAPA shows in figure 3 that the spin valve sensor 50 layers

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include at least one pinned magnetic layer having a composition including CoFe and at least one spacer layer having a composition including Cu with at least one free magnetic layer having a composition including Co or CoFe.

AAPA discloses that the sublayer has an upper surface. As the claims are directed to a spin valve sensor, per se, the method limitation appearing in claim 7 has only been accorded weight to the extent that it affects the structure of the completed spin valve sensor. Note that "[d]etermination of patentability in 'product-by-process' claims is based on product itself, even though such claims are limited and defined by process [i.e., "etched"], and thus product in such claim is unpatentable if it is the same as, or obvious form, product of prior art, even if prior product was made by a different process", *In re Thorpe, et al.*, 227 USPQ 964 (CAFC 1985). Furthermore, note that a "[p]roduct-by-process claim, although reciting subject matter of claim in terms of how it is made [i.e., "etched"] is still product claim; it is patentability of product claimed and not recited process steps that must be established, in spite of fact that claim may recite only process limitations", *In re Hirao and Sato*, 190 USPQ 685 (CCPA 1976).

AAPA, however, is silent as to a sublayer of the seed layer being Si. AAPA is also silent as to the seed sublayer being fabricated to have a thickness of approximately 20 Angstroms and the PtMn layer having a thickness of approximately 120 Angstroms.

Chen et al discloses in the paragraph bridging columns 3 and 4 a sublayer of a seed layer being either Ta or Si.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to substitute the Ta layer of AAPA with a Si layer as taught by Chen et al. The rationale is as follows: one of ordinary skill in the art at the time the invention was made

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would have been motivated to substitute a Ta layer with a Si layer, which is well within the purview of a skilled artisan and absent an unobvious result, because the two layers are art recognized equivalents.

It also would have been obvious to a person having ordinary skill in the art at the time the invention was made to fabricate the seed sublayer of AAPA to have a thickness of approximately 20 Angstroms and the PtMn layer of AAPA to have a thickness of approximately 120 Angstroms. The rationale is as follows: one of ordinary skill in the art at the time the invention was made would have been motivated to fabricate the seed sublayer to have a thickness of approximately 20 Angstroms (down from 35 Angstroms) and the PtMn layer to have a thickness of approximately 120 Angstroms (down from 150 Angstroms), which is well within the purview of a skilled artisan and absent an unobvious result, to reduce the size of the spin valve sensor.

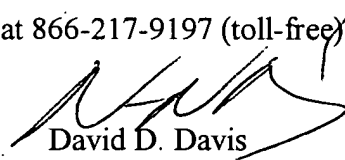
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Davis whose telephone number is (703) 308-1503. The examiner can normally be reached on Monday thru Friday between 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David D. Davis
Primary Examiner
Art Unit 2652

ddd